



Serial No.: 09/976,412
Inventor(s): Kelly, et al.

U.S. PTO Customer No. 25280
Case No.: 5319

2-23-04

AF

Image
1771

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Kelly, et al.
Serial Number: 09/976,412
Filed: October 12, 2001
Title: LOW CONTAMINANT WIPER
Group Art Unit: 1771
Examiner: Norca L. Torres-Velazquez

Certificate of Express Mailing Under 37 CFR §1.10

I hereby certify that this correspondence, and all correspondence referenced herein is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" with a Mailing Label Number listed below in an envelope addressed to "Mail Stop Appeal Brief-Patents, Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450" with sufficient postage on the date listed below:

Express Mail Label No.: EL 992173905 US

Date: February 20, 2004

Name: Kerry A. Lawter

Signature: Kerry A. Lawter

BRIEF ON APPEAL UNDER 37 CFR § 1.192

Mail Stop Appeal Brief-Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-14501

Sir:

The following appeal brief is submitted pursuant to the Notice of Appeal filed on or about December 22, 2003 from the Final Action dated October 31, 2003.

REAL PARTY IN INTEREST

Milliken & Company, P.O. Box 1926, 920 Milliken Road, Spartanburg, South Carolina 29303 (Assignee).

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF THE CLAIMS

Claims 1 – 31 have been rejected. A copy of the current claims is attached hereto as Exhibit A.

STATUS OF THE AMENDMENTS

An Amendment filed August 6, 2003 was entered.

SUMMARY OF THE INVENTION

As shown, the wiper 10 includes an interior wiping surface 12 and a multiplicity of perimeter edges. In the illustrated and potentially preferred embodiment the wiper 10 is of a substantially quadrilateral geometry such that the wiper 10 includes a first perimeter edge 14 and an opposing second perimeter edge 16 as well as a third perimeter edge 18 and a fourth perimeter edge 20 extending in a generally right angled relation between the first perimeter edge 14 and the second perimeter edge 16.

As illustrated, the first perimeter edge 14 and the second perimeter edge 16 extending in the cross-machine direction are each preferably provided along their length with a sealed edge 24, 26 formed by a hot knife or laser cutting operation so as to seal the fibers along the raw cut edge of the wiper 10. In addition, the first and second perimeter edges 14, 16 are each preferably provided with an inwardly extending discontinuous fused border 28, 30 extending inwardly from the adjacent sealed edges 24, 26 towards the interior wiping surface 12. As shown, the discontinuous fused borders 28, 30 are preferably made up of a multiplicity of discrete bond points 34, 36 at which thermoplastic fibers such as polyester forming the wiper 10 have undergone localized melting thereby fusing together upon resolidification.

As shown, the third and fourth perimeter edges 18, 20 extending in the machine direction preferably have a slightly different configuration. As best seen by simultaneous reference to FIGS. 1 and 2, the perimeter edges 18, 20 extending in the machine direction of the wiper 10 are preferably formed by folding the edges inwardly so as to form double layer borders 38, 40. Inboard of the double layer borders 38, 40 melt fused attachment zones 48, 50 are applied to thereby seal the double layer borders 38, 40 in place.

It is believed that the utilization of the discontinuous fused borders 28, 30 reduces the generation of particulate matter upon the application of tension in the direction

parallel to such borders by allowing the force to be spread more evenly through the matrix formed by the interstitial areas between the bond points 34, 36 thereby reducing the concentration of force which may lead to the localized breakage of fibers.

ISSUES

1. Whether or not claims 1-3, 15-17, and 26-31 are patentable over Paley et al. (U.S. 4,888,229) in view of Meitner et al. (U.S. 4,493,868).
2. Whether or not claims 4, 18, and 23-25 are patentable over Paley et al. and Meitner et al., in view of Morin et al. (U.S. 6,189,189).
3. Whether or not claims 5-14 and 19-22 are patentable over Paley et al., Meitner et al., Morin et al., further in view of Dean et al. (U.S. 6,139,954) and Rockwell (U.S. 6,001,442).

GROUPING OF CLAIMS

Applicant respectfully submits that the claims stand or fall as the groups presented in this Appeal.

ARGUMENT

A. Claims 1-3, 15-17 and 26-31 are patentable over Paley et al. (U.S. 4,888,229) in view of Meitner et al. (U.S. 4,493,868).

The Examiner has taken the position that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the wiper of Paley and provide it with a discontinuous fused zone allegedly taught by Meitner, motivated by the desire to produce "an area with aesthetically pleasing appearance and with physical properties and characteristics approaching those characteristics of textile materials as disclosed by Meitner."

1. The Paley reference teaches away from the claimed invention.

Applicant respectfully submits that all of claims 1-3, 15-17 and 26-31, as amended, include the limitation of a "discontinuous fused zone," and that the Paley reference teaches away from a discontinuous fused zone. The Paley reference teaches a wiping cloth having a continuous fused border in the material along the peripheral edges of the wiper and extending inwardly into the wiper a distance great enough to provide the fused border with sufficient area and sufficient tear-strength to maintain therein segments of the material of the wiper which otherwise might be released from the peripheral edges of the wiper during use of the wiper, yet small enough to maintain pliability and absorbency in the wiper for wiping procedures. (See abstract and Fig. 1). The Paley

reference states that the fused border extends inwardly from the periphery, in order to seal any severed segments or fibers, thus preventing their release during use of the wiper. (Column 3, lines 29-33). This reference even includes a formula requiring that the continuous fused border extend inwardly a distance D, which is chosen so as to be large enough to capture all of the severed segments, which otherwise could be free to escape into the ambient atmosphere and contaminate the controlled environment with which the wiper is used. (Column 3, lines 34-53).

In view of these teachings, Applicant respectfully submits that the Paley reference teaches away from the use of a discontinuous fused zone. Indeed, column 3, lines 13-19 state, in pertinent part "... however, experience has shown that the localized melting of the segments is insufficient to prevent the segments from release when subjected to agitation and other manipulations common in the use of the wiper."

2. The Meitner reference constitutes non-analogous art with respect to the instant claims

The Federal Circuit has adopted a two-step test for determining whether cited references properly fall within the scope of the art in *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986). First, the reference must be "within the field of the inventor's endeavor." Second, if the reference is outside that field of endeavor, it must be "reasonably pertinent to the particular problem with which the inventor was involved." In this case, the reference is neither within the field of the inventor's endeavor, nor is it reasonably pertinent to the particular problem with which the inventor was involved.

In the instant application, the field of Applicant's endeavor is woven or knitted wiping cloths that meet substantially all of the specifications for use in cleanrooms, particularly those specifications for Class 100 clean rooms and below (see Summary of the Invention). The Meitner reference is directed to the "field of manufacture of nonwoven materials and resulting products." (see column 1, lines 12-13).

Turning now to the question of whether the reference is reasonably pertinent to the particular problem with which the inventor was involved:

"A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. Thus, the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve. If a reference disclosure has the same purpose as the claimed invention, the reference relates to the same problem, and that fact supports use of that reference in an obviousness rejection. An inventor may well have been motivated to consider the reference when making his invention. If it is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it. *In re Clay*, 966 F.2d at 659-60, 23 USPQ2d at 1961 (Fed. Cir. 1992).

In the instant case, the claims are directed to a wiper suitable for use in a cleanroom environment, having substantially stable edges that do not undergo substantial particulate generating fracture upon application of tensile stresses applied during normal use. (See Summary of the Invention in the instant application). Meitner, on the other hand, is directed to solving the problems of manufacturing nonwoven materials having a high degree of bulk, strength, softness, flexibility and tactile qualities associated with conventional textiles.

Applicant respectfully submits that one seeking to solve the problem of providing wiping cloths with edges that do not generate particulate fracture upon the application of stress would not seek the solution in the Meitner reference, which is directed to solving the problem of improving non-wovens and their manufacture to achieve a high degree of bulk and other desirable textile-like properties. (See column 1, lines 40-43 of the Meitner reference). These problems, and the solutions proposed, are wholly unrelated to one another.

B. Claims 4, 18, and 23-25 are patentable over Paley et al. and Meitner et al., in view of Morin et al. (U.S. 6,189,189).

Applicant respectfully maintains that the Paley reference teaches away from the use of discontinuous borders, and that the Meitner reference is non-analogous art, as set forth above. The Examiner has taken the position that since Morin teaches the importance of having reduced non-volatile residues in a cleanroom wiper and also teaches the use of polyester yarns, it is reasonable to presume that Morin's invention would provide polyester that is substantially free of inorganic ionic additives in order to provide a wiper with reduced non-volatile residues.

The Examiner has admitted that the Morin reference does not actually include any information or teaching regarding inorganic ionic additives. Thus, the Examiner is relying on a combination of three references to reject these claims, where the teaching of the third reference is admittedly "presumed," rather than being specifically disclosed. Further, Applicant respectfully submits that the suggestion that the claimed invention is obvious in light of the above references is improper based on hindsight. Court decisions criticizing improper use of hindsight are legion:

"[D]ecomposing an invention into its constituent elements, finding each element in the prior art, and then claiming that it is easy to reassemble these elements into the invention, is a forbidden *ex post* analysis." *In re Mahurkar Patent Litigation*, 831 F. Supp. 1354, 28 USPQ2d 1801 (N.D. Ill. 1993).

C. Claims 5-14 and 19-22 are patentable over Paley et al., Meitner et al., Morin et al., further in view of Dean et al. (U.S. 6,139,954) and Rockwell (U.S. 6,001,442).

Applicant respectfully maintains that the Paley reference teaches away from the use of discontinuous borders, that the Meitner reference is non-analogous art, and that the

Morin reference does not teach what the Examiner claims, as set forth above. Applicant also maintains that the suggestion that the claimed invention is obvious in light of the above references is improper based on hindsight.

Furthermore, Applicant respectfully submits that the Examiner has not shown any teaching within the references to combine elements in the manner suggested by the Examiner. The record is totally devoid of such evidence showing any motivation to combine the references in the manner suggested. Combining reference teachings is improper unless the prior art contains some suggestion of the proposed combination.

The motivation to modify the prior art must flow from some teaching in the art that suggests the desirability or incentive to make the modification needed to arrive at the claimed invention. See *In re Napier*, 55 F.3d 610, 613, 34 U.S.P.Q.2d 1782, 1784 (Fed. Cir. 1995) ("Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination."); accord *In re Geiger*, 815 F.2d 686, 688, 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987); *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d 1397, 1399 (Fed. Cir. 1989) ("[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification") (quoting *In re Gordon*, 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984)); *Sentex Systems, Inc. v. Elite Access Systems, Inc.*, 1999 U.S. App. LEXIS 3846 at *17 ("to invalidate claimed subject matter for obviousness, the combined teachings of the prior art references must suggest, expressly or by implication, the improvements embodied by the invention.").

"[T]he PTO erred in rejecting the claimed invention as an obvious combination of the teachings of two prior art references when the prior art provided no teaching, suggestion or incentive supporting the combination." *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990). "[A] challenger to the validity of a patent 'cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention;' the challenger 'has the burden to show some teaching or suggestion in the references to support their use in the particular claimed combination.'" *Smithkline Diagnostics, Inc. v. Helena Laboratories Corp.*, 859 F.2d 878, 887, 8 USPQ2d 1468, 1475 (Fed. Cir. 1988).

Moreover, the suggestion that it would be obvious to combine prior art references in order to support a 103 rejection becomes less plausible when the necessary elements can only be found in a large number of references.

Conclusion

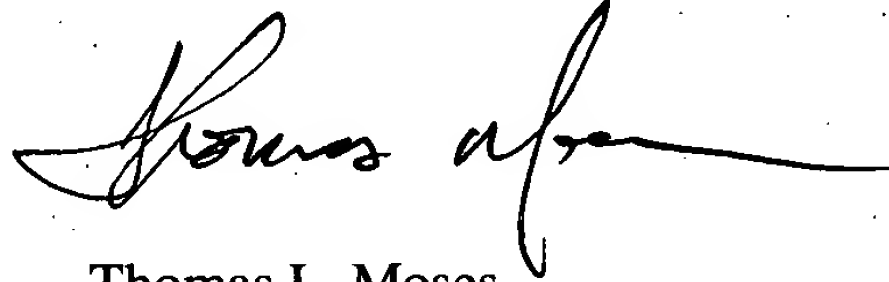
For the above reasons, Appellant respectfully requests the Appeal Board to reverse the decision of the examiner. In the event that there are additional fees associated with the submission of these papers, Applicant hereby authorizes the Commissioner to

Serial No.: 09/976,412
Inventor(s): Kelly, et al.

U.S. PTO Customer No. 25280
Case No.: 5319

withdraw those fees from our Deposit Account No. 04-0500. Also, in the event that additional time is required to have the papers submitted herewith for the above referenced application to be considered timely, Applicant hereby petitions for any additional time required to make these papers timely and authorization is hereby granted to withdraw any additional fees necessary for this additional time from our Deposit Account No. 04-0500.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Thomas L. Moses", with a long horizontal flourish extending to the right.

Thomas L. Moses
Reg. No. 39,781

MILLIKEN & COMPANY
920 Milliken Road, M-495
Spartanburg, SC 29303
(864) 503-1599

EXHIBIT A

1. (Original) A wiper suitable for use in a cleanroom environment and being constructed at least partly of a textile fabric having a machine direction and a cross-machine direction, said fabric being formed from a multiplicity of yarns including thermoplastic filaments, the wiper comprising: an interior and a plurality of perimeter edges disposed in surrounding relation to the interior and at least one discontinuous fused border zone disposed inboard of and extending substantially parallel to at least one of the perimeter edges, wherein said discontinuous fused border zone comprises a plurality of substantially discrete fusion points formed by localized melt fusion of said thermoplastic filaments such that said discrete fusion points are disposed within a matrix of unmelted material.

2. (Original) The wiper according to claim 1, wherein said thermoplastic filaments are polyester.

3. (Original) The wiper according to claim 2, wherein said textile fabric is formed substantially entirely of polyester.

4. (Original) The wiper according to claim 3, wherein said textile fabric is subjected to heat setting at a temperature of from 180 to 300 degrees Fahrenheit and wherein said yarns have not been heated above a temperature of 300 degrees Fahrenheit.

5. (Original) The wiper according to claim 3, wherein said polyester is substantially free of inorganic ionic additives such that complete combustion of said polyester, yields an ash content of not greater than about zero to about 0.1% of the initial weight of said polyester.

6. (Original) The wiper according to claim 5, wherein said textile fabric is selected from the group consisting of knit fabric, woven fabric and nonwoven fabric.

7. (Original) The wiper according to claim 6, wherein the yarns forming the textile fabric have a linear density in the range of about 15 to about 250 denier.

8. (Original) The wiper according to claim 7, wherein said substantially discrete fusion points within said discontinuous fused border zone are ultrasonically induced.

9. (Original) The wiper according to claim 7, wherein said substantially discrete fusion points are of elongate geometry arranged in end to end relation in a plurality of rows extending substantially parallel to said perimeter edge.

10. (Original) The wiper according to claim 9, wherein the discrete fusion points are staggered in relation to the discrete fusion points in adjacent rows such that a brickwork pattern is formed.

11. (Original) The wiper according to claim 1, wherein the wiper is quadrilateral in configuration and wherein a first discontinuous fused border zone is disposed inboard of and substantially parallel to a first perimeter edge and wherein a second discontinuous fused border zone is disposed inboard of and substantially parallel to a second perimeter edge in opposing relation to said first perimeter edge.

12. (Original) The wiper according to claim 11, wherein the first and second perimeter edges extend in the cross-machine direction of the textile fabric.

13. (Original) The wiper according to claim 11, wherein a third discontinuous fused border zone is disposed inboard of and substantially parallel to a third perimeter edge and wherein a fourth discontinuous fused border zone is disposed inboard of and substantially parallel to a fourth perimeter edge in opposing relation to said third perimeter edge.

14. (Original) The wiper according to claim 13, wherein the first and second perimeter edges extend in the cross-machine direction of the textile fabric and wherein the third and fourth perimeter edges extend in the machine direction of the textile fabric.

15. (Currently amended) A wiper suitable for use in a cleanroom environment and being constructed at least partly of a textile fabric having a machine direction and a cross-machine direction, said fabric being formed from a multiplicity of

yarns including thermoplastic filaments, the wiper comprising: an interior and a plurality of perimeter edges disposed in surrounding relation to the interior wherein at least one of said perimeter edges comprises a folded double layer border and a discontinuous fused attachment zone disposed inboard of the folded double layer border, wherein said discontinuous fused attachment zone is formed by melt fusion of said thermoplastic filaments.

16. (Original) The wiper according to claim 15, wherein said thermoplastic filaments are polyester.

17. (Original) The wiper according to claim 16, wherein said textile fabric is formed substantially entirely of polyester.

18. (Original) The wiper according to claim 17, wherein said textile fabric is subjected to heat setting at a temperature of from 180 to 300 degrees Fahrenheit and wherein said yarns have not been heated above a temperature of 300 degrees Fahrenheit.

19. (Original) The wiper according to claim 17, wherein said polyester is substantially free of inorganic ionic additives such that complete combustion of said polyester, yields an ash content of not greater than about zero to about 0.1% of the initial weight of said polyester.

20. (Original) The wiper according to claim 19, wherein said textile fabric is selected from the group consisting of knit fabric, woven fabric and nonwoven fabric.

21. (Original) The wiper according to claim 20, wherein the yarns forming the textile fabric have a linear density in the range of about 15 to about 250 denier.

22. (Original) The wiper according to claim 21, wherein said fused attachment zone is ultrasonically induced.

23. (Original) The wiper according to claim 15, wherein said fused attachment zone comprises a plurality of substantially discrete fusion points formed by localized melt fusion of said thermoplastic filaments such that said discrete fusion points are disposed within a matrix of unmelted material.

24. (Original) The wiper according to claim 23, wherein said substantially discrete fusion points are of elongate geometry arranged in end to end relation in a plurality of rows extending substantially parallel to said double layer border.

25. (Original) The wiper according to claim 24, wherein the discrete fusion points are staggered in relation to the discrete fusion points in adjacent rows such that a brickwork pattern is formed.

26. (Original) The wiper according to claim 15, wherein the wiper is quadrilateral in configuration and wherein a first folded double layer border defines a first perimeter edge and wherein a second folded double layer border defines a second perimeter edge in opposing relation to said first perimeter edge.

27. (Original) The wiper according to claim 26, wherein the first and second perimeter edges extend in the machine direction of the textile fabric.

28. (Original) The wiper according to claim 26, wherein a third folded double layer border defines a third perimeter edge and wherein a fourth folded double layer border defines a fourth perimeter edge in opposing relation to said third perimeter edge.

29. (Original) A wiper suitable for use in a cleanroom environment and being constructed at least partly of a textile fabric having a machine direction and a cross-machine direction, said fabric being formed from a multiplicity of yarns including thermoplastic filaments, the wiper comprising: an interior and four perimeter edges disposed in surrounding relation to the interior wherein at least one of said perimeter edges comprises a folded double layer border and a fused attachment zone disposed inboard of the folded double layer border, wherein said fused attachment zone is formed by melt fusion of said thermoplastic filaments and wherein at least one other of said perimeter edges comprises a thermally sealed edge and a discontinuous fused border zone

extending inwardly from said thermally sealed edge wherein said discontinuous fused border zone comprises a plurality of substantially discrete fusion points formed by localized patterned melt fusion of said thermoplastic filaments such that said discrete fusion points are disposed within a matrix of unmelted material.

30. (Original) The wiper according to claim 29, wherein the wiper is of substantially right-angled quadrilateral configuration and wherein a first discontinuous fused border zone is disposed inboard of and substantially parallel to a first perimeter edge and wherein a second discontinuous fused border zone is disposed inboard of and substantially parallel to a second perimeter edge in opposing relation to said first perimeter edge and wherein a first folded double layer border defines a third perimeter edge extending between said first perimeter edge and said second perimeter edge and wherein a second folded double layer border defines a fourth perimeter edge in opposing relation to said third perimeter edge.

31. (Original) The wiper according to claim 30, wherein the first and second perimeter edges extend in the cross-machine direction of the textile fabric and wherein the third and fourth perimeter edges extend in the machine direction of the textile fabric.

32. (Canceled) A cleanroom wiper constructed at least partly of a textile fabric formed from a multiplicity of filament containing yarns, the wiper comprising: an interior and plurality of perimeter edges disposed in surrounding relation to the interior

wherein at least one of said perimeter edges is characterized by a low discharge of particles under tension such that on average less than about 1000 particles of size greater than or equal to 0.3 microns are generated during a use simulation procedure wherein a substantially untensioned six centimeter segment of said at least one perimeter edge is stretched in a vertical direction within a particle collection environment such that said segment is under a tension of six pounds force, said segment is retained within the particle collection environment in the stretched condition for a period of 2 seconds and said segment is thereafter removed from the particle collection environment prior to relief of the stretched condition.

33. (Canceled) The wiper according to claim 32 wherein at least one of said perimeter edges is characterized by a low discharge of particles under tension such that on average less than about 900 particles of size greater than or equal to 0.3 microns are generated during a use simulation procedure wherein a substantially untensioned six centimeter segment of said at least one perimeter edge is stretched in a vertical direction within a particle collection environment such that said segment is under a tension of six pounds force, said segment is retained within the particle collection environment in the stretched condition for a period of 2 seconds and said segment is thereafter removed from the particle collection environment prior to relief of the stretched condition.

34. (Canceled) The wiper according to claim 32 wherein at least one of said perimeter edges is characterized by a low discharge of particles under tension such that on average less than about 800 particles of size greater than or equal to 0.3 microns

are generated during a use simulation procedure wherein a substantially untensioned six centimeter segment of said at least one perimeter edge is stretched in a vertical direction within a particle collection environment such that said segment is under a tension of six pounds force, said segment is retained within the particle collection environment in the stretched condition for a period of 2 seconds and said segment is thereafter removed from the particle collection environment prior to relief of the stretched condition.

35. (Canceled) The wiper according to claim 32 wherein at least one of said perimeter edges is characterized by a low discharge of particles under tension such that on average less than about 700 particles of size greater than or equal to 0.3 microns are generated during a use simulation procedure wherein a substantially untensioned six centimeter segment of said at least one perimeter edge is stretched in a vertical direction within a particle collection environment such that said segment is under a tension of six pounds force, said segment is retained within the particle collection environment in the stretched condition for a period of 2 seconds and said segment is thereafter removed from the particle collection environment prior to relief of the stretched condition.

36. (Canceled) The wiper according to claim 32 wherein at least one of said perimeter edges is characterized by a low discharge of particles under tension such that on average less than about 600 particles of size greater than or equal to 0.3 microns are generated during a use simulation procedure wherein a substantially untensioned six centimeter segment of said at least one perimeter edge is stretched in a vertical direction within a particle collection environment such that said segment is under a tension of six

Serial No.: 09/976,412
Inventor(s): Kelly, et al.

U.S. PTO Customer No. 25280
Case No.: 5319

pounds force, said segment is retained within the particle collection environment in the stretched condition for a period of 2 seconds and said segment is thereafter removed from the particle collection environment prior to relief of the stretched condition.